

## TRENDS IN GONORRHOEA AMONG YOUNG PEOPLE COMPARED WITH AGE AT MARRIAGE AND OTHER RELATED DATA\*

BY

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An increasing incidence of gonorrhoea has recently been reported in different countries and this trend seems to be most marked in the younger age groups. In Denmark the 15 to 19-year group had the greatest number of female cases in 1960, the total having risen since 1959 (Nielsen, 1961). In England and Wales the percentage of female teenagers suffering from gonorrhoea had also risen, from 22·7 per cent. in 1957 to 26·3 per cent. in 1961 (British Cooperative Clinical Group, 1963). An increase in gonorrhoea among teenagers has also been observed in the U.S.A.; 44,000 cases were reported in the 15 to 19-year group in 1956 and 5 years later the total was 52,000 (A.S.H.A., 1963). In Finland the incidence of gonorrhoea in females aged 15 to 19 years has increased from 1953 to 1958, but there was no corresponding rise in males (Härö and Pätäälä, 1961).

The Finnish venereal disease statistics have been based since 1953 on individual case reports, giving information of the disease and of the patient's age, occupation, and other data. The reports are collected and analysed by the National Board of Health. The reports and expenses of each Medical Officer of Health being controlled by the central authority, the reporting is quite reliable. It is possible that some of the cases treated by private practitioners have not been reported, but on the whole these are not very numerous.

The geographical position of Finland makes the country somewhat like an island, the main communications with other countries being through the ports. The whole population is about 4·5 million, some 60 per cent. living in rural districts, 30 per cent. in smaller towns, and 10 per cent. in the capital city, Helsinki. The proportion of urban settlement is rapidly increasing because of industrialization.

### Area

*Females.*—The most important centre of infection is Helsinki which was in 1961 the source of gonorrhoeal infection in 60 per cent. of the female patients of all age groups (1,013 cases) and in 50 per cent. of the 15 to 19-year group (200 cases) (Fig. 1, opposite).

Ships and foreign countries are more important in the teenage group, about 14 per cent. of cases deriving from the ports. This number has been disclosed partly by the investigations of the harbour police, young women arrested for idling without sufficient cause in the port area being in most cases examined for venereal diseases.

*Males.*—The importance of Helsinki as a source of infection is not so pronounced as in females (Fig. 1, opposite), but the proportion of young men (190 cases) catching gonorrhoea in ships and foreign countries is about 19 per cent. of the whole.

The figure for rural areas is only about 9 per cent. of females and males of the 15 to 19-year group. The infection rate is under 0·5 per thousand of the same age and is therefore insignificant.

### Age Group

The distribution of gonorrhoea between age groups in Helsinki for the 44 years 1918-62 is presented in Fig. 2 (overleaf). The absolute numbers by age have been standardized to the standard population at 1950 and the percentage distribution calculated on this basis. The proportion of young female patients has changed from time to time. It was great during the war and during the economic depression in the thirties. The lowest numbers were seen in 1948-52. The proportion of women between 30 and 49 years of age used to be increasing, but this development seems to have ceased during the last few years. The distribution of male patients between age groups has been about the same throughout the observation period.

\* Paper read at the M.S.S.V.D. meeting in Copenhagen, on June 6, 1963. Requests for reprints should be addressed to Dr. O. P. Salo at the Clinic of Dermatology and Venereology, University Central Hospital, Helsinki, Finland.

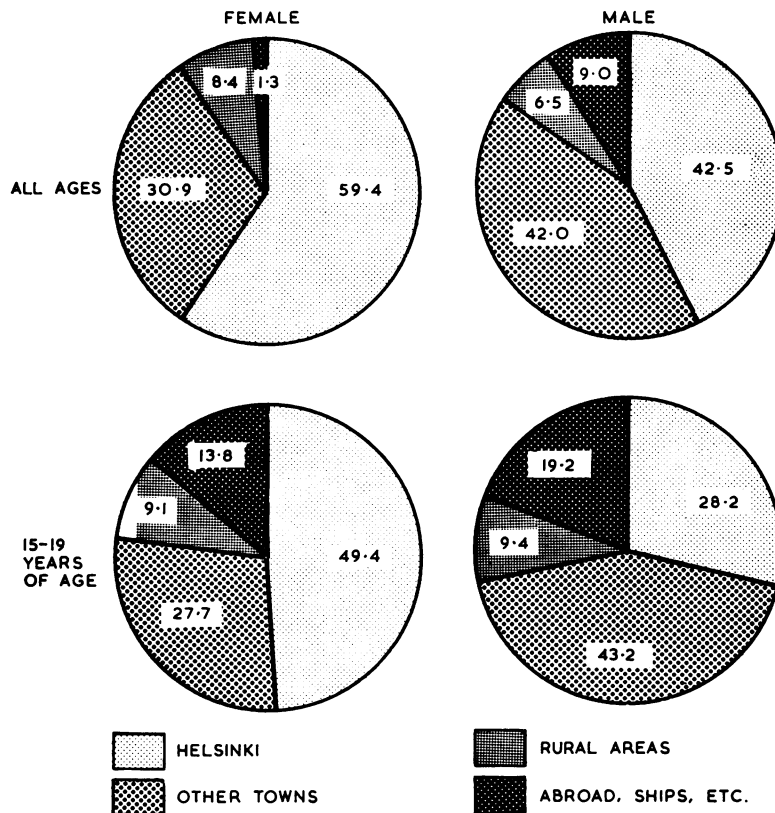


FIG. 1.—Percentage distribution of gonorrhoea by area, sex, and age group, 1961.

The population between 15 and 19 years of age is very heterogeneous both physiologically and in other respects, and for this reason the group is dealt with on a yearly basis in this study. The material consists of individual case reports from 1953 to 1962, and population data by age and sex for each year were supplied by the Central Office of Statistics. In Finland, as in many other countries, the yearly number of births has varied greatly.

*Females.*—The absolute numbers of female teenagers with gonorrhoea have steadily increased (Table). The distribution of cases between different age groups has also shown some changes. In Helsinki in 1953 and 1958 the proportion of the age groups 18 and 19 years was about 75 per cent. of cases and in 1962 only 55 per cent. In smaller towns the same trend can be observed. In 1953 the morbidity rate from gonorrhoea in Helsinki did not exceed

TABLE  
NOTIFIED CASES OF GONORRHOEA IN TEENAGERS IN FINLAND, BY SEX, AND AGE, 1953, 1958, AND 1962

| Sex       |    | Female   |      |      |             |      |      | Male     |      |      |             |      |      |
|-----------|----|----------|------|------|-------------|------|------|----------|------|------|-------------|------|------|
| Area      |    | Helsinki |      |      | Other Towns |      |      | Helsinki |      |      | Other Towns |      |      |
| Year      |    | 1953     | 1958 | 1962 | 1953        | 1958 | 1962 | 1953     | 1958 | 1962 | 1953        | 1958 | 1962 |
| Age (yrs) | 15 | —        | 2    | 10   | —           | 1    | 10   | 1        | 1    | 4    | —           | —    | 12   |
|           | 16 | 1        | 5    | 27   | 5           | 4    | 37   | 3        | 4    | 21   | 3           | 5    | 33   |
|           | 17 | 11       | 9    | 46   | 12          | 8    | 35   | 17       | 19   | 32   | 10          | 7    | 52   |
|           | 18 | 16       | 20   | 49   | 13          | 23   | 34   | 31       | 48   | 57   | 37          | 27   | 96   |
|           | 19 | 24       | 26   | 54   | 15          | 25   | 42   | 54       | 48   | 71   | 33          | 39   | 91   |
| Total     |    | 52       | 62   | 186  | 45          | 61   | 158  | 106      | 120  | 185  | 83          | 78   | 284  |

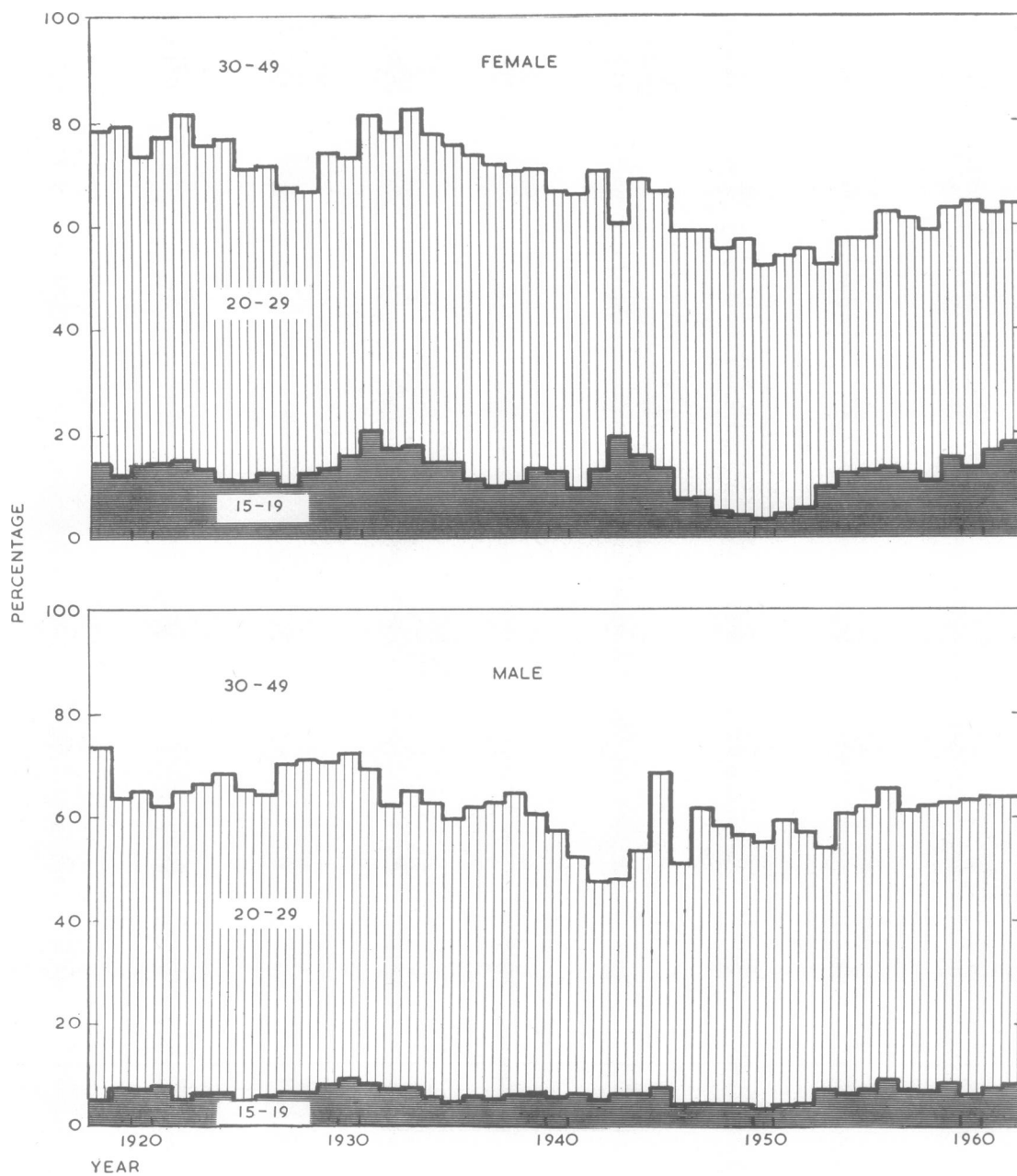


FIG. 2.—Percentage distribution of cases of gonorrhoea by age and sex, in Helsinki, 1918–62 (Standardized).

10 per thousand in any of the age groups studied (Fig. 3), and a marked increase can be observed in the 15, 16, and 17-year age groups. In smaller towns the morbidity rate has not essentially changed during the study period. Only in the last 2 years does the morbidity rate of the 16-year group seem to have slightly increased.

By following the morbidity in this way, it is difficult to see the changes in the behaviour of age groups born in different years. In order to see if there have been any changes during the observation time, two age cohorts, those born just before the war in 1939-40 and those born just after it in 1944-45 were followed (Fig. 4). It is evident that in Helsinki the behaviour of female teenagers has changed. The morbidity rate of the age group born in 1944-45 is significantly higher at age 17, than that of the age group born in 1939-40. In smaller towns the trend is the same.

*Males.*—The absolute numbers of cases of gonorrhoea in male teenagers have shown a steady increase during the observation period in Helsinki (Table), the total number of notified cases having increased from 106 in 1953 to 185 in 1962. In the smaller towns the increase is greater still, the number of notified cases being 78 in 1958 and 284 in 1962. There has also been a change in the distribution of cases inside the 5-years group. The proportion of 16-year-old males is much greater in 1962 than in 1953, both in Helsinki and in other towns.

Here again, the age and sex-specific morbidity rates in one year age groups have been calculated (Fig. 5, overleaf). During the observation period there seems to have been a decrease in the morbidity of the 19-year-olds and a little increase in the morbidity of the 16-year-olds in Helsinki. In other towns, there seems to have been a little increase in the morbidity of the 16 and 17-year-olds.

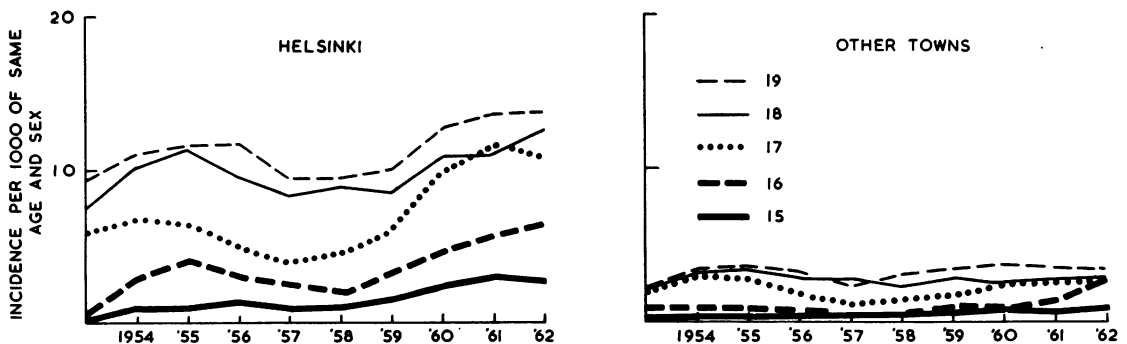


FIG. 3.—Morbidity from gonorrhoea of female teenagers (15-19 yrs), by age, 1953-1962, in Helsinki and other towns. (Smoothed; three-point moving average).

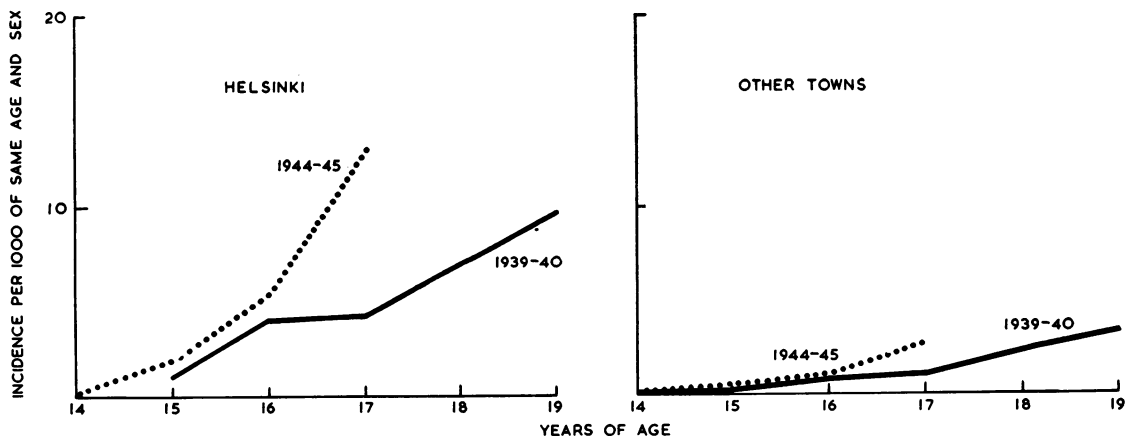


FIG. 4.—Morbidity from gonorrhoea of females in age cohorts born in 1939-40 and 1944-45, in Helsinki and other towns.

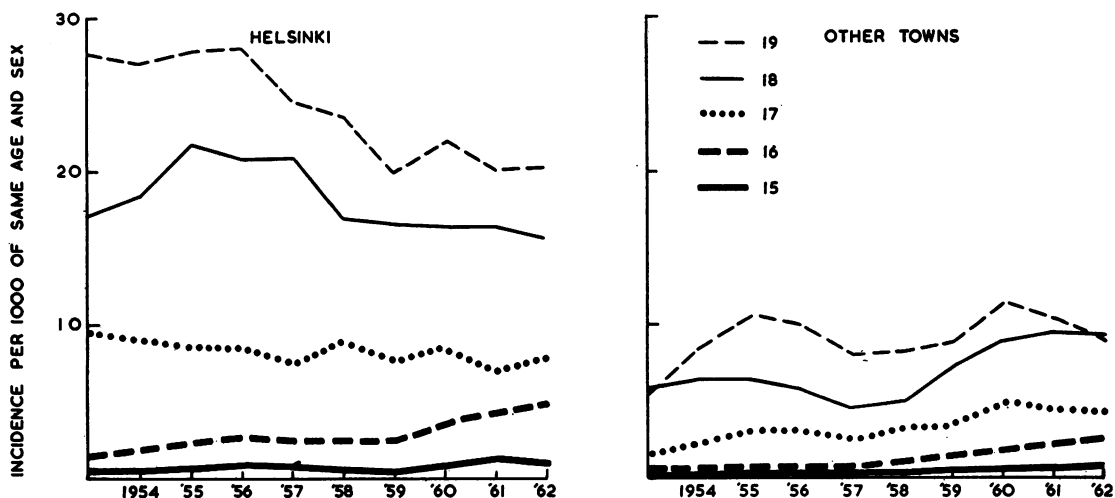


FIG. 5.—Morbidity from gonorrhoea of male teenagers (15–19 yrs), by age, 1953–1962, in Helsinki and other towns. (Smoothed; three-point moving average).

The morbidity of the age cohorts born in 1939–40 and 1944–45 is presented in Fig. 6. Until age 17, no change in the morbidity of the different cohorts can be observed in Helsinki, but in other towns, the morbidity is greater at 16 and 17 years of age than in those born 1944–45 than in those born in 1939–40.

**Male:Female Ratio.**—A comparison of the male and female morbidities shows that in Helsinki the male:female ratio of the 19-year-olds has diminished from 2.9 in 1953 to 1.5 in 1962. In younger age groups and in other towns there has been practically no change in the sex ratio. Comparison of Helsinki

with other towns shows that the morbidity of males in Helsinki in 1953 was five or six times higher than in other towns, but in 1962 only about twice as high. In females the morbidity rate has been three to four times higher in Helsinki than in other towns and no change has been observed in the observation period.

### Discussion

The aforementioned data seem to indicate that gonorrhoea in young people may also become a problem in Finland. Some sudden changes have occurred, but in our opinion the changes in Finland are

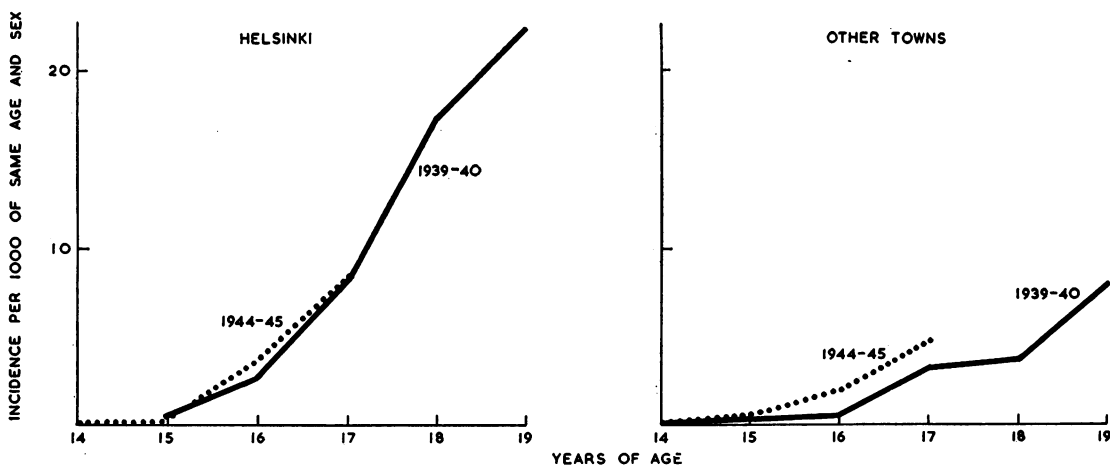


FIG. 6.—Morbidity from gonorrhoea of males in age cohorts born in 1939–40 and 1944–45, in Helsinki and other towns.

not so alarming as those reported from other countries. Conclusions drawn from V.D. statistics only can be too one-sided, and that is why we have tried to consider some other possible sources of information. The average age at the menarche is one of these factors. In Finland it had fallen from 15.9 years in 1919 to 14.2 years in 1950 (Simell, 1952.) Another factor is the age at marriage. Fig. 7 presents the marriages of persons under 20 years old as a percentage of all first marriages. The percentage of young female brides has increased by about 5 per cent. during 10 years to about 20 per cent. in 1960. In males the rise has not been so marked (Piepponen, 1963). Babies born to young mothers should also be considered. There seems to have been a rising trend in the number of babies born to mothers under 20 years of age from 1945 to 1960 (Fig. 8).

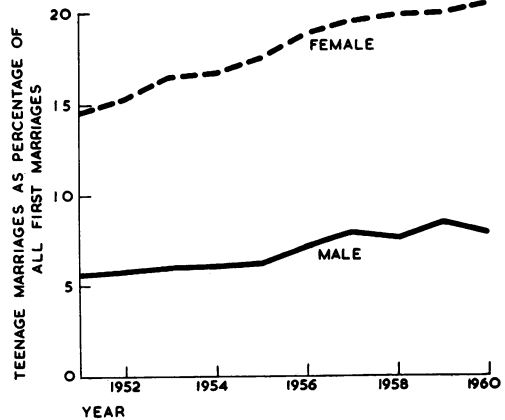


FIG. 7.—Marriages of men and women under 20 years of age, as percentage of all first marriages, 1951–1960.

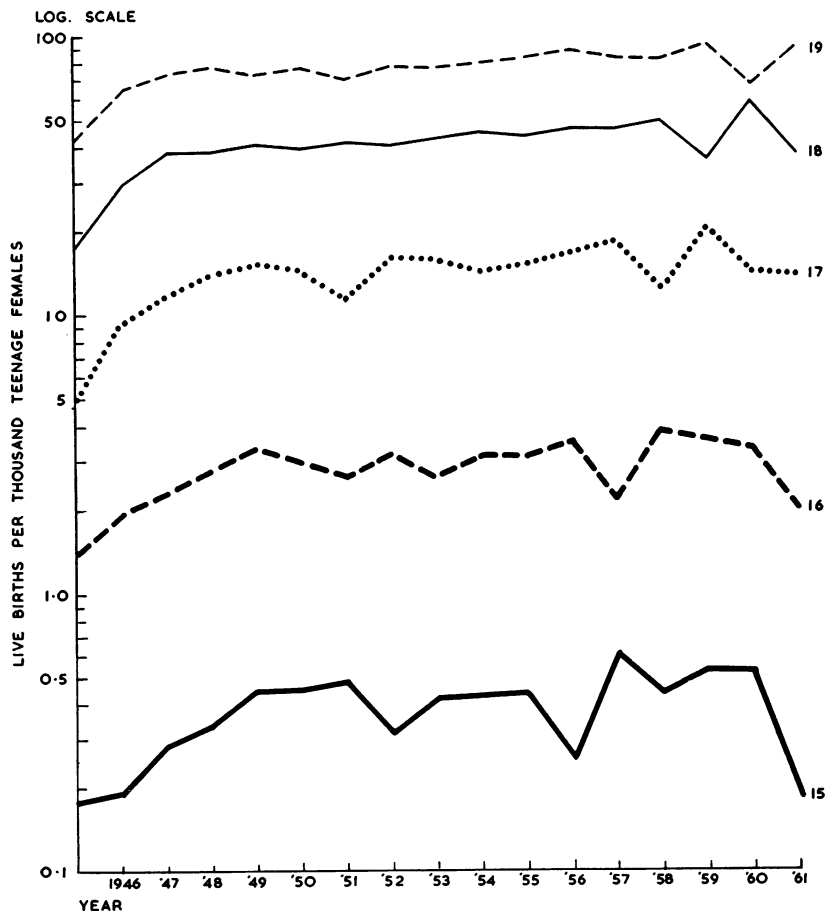


FIG. 8.—Live births to 15–19-year-old mothers per thousand teenage females, by mother's age, 1945–1961.

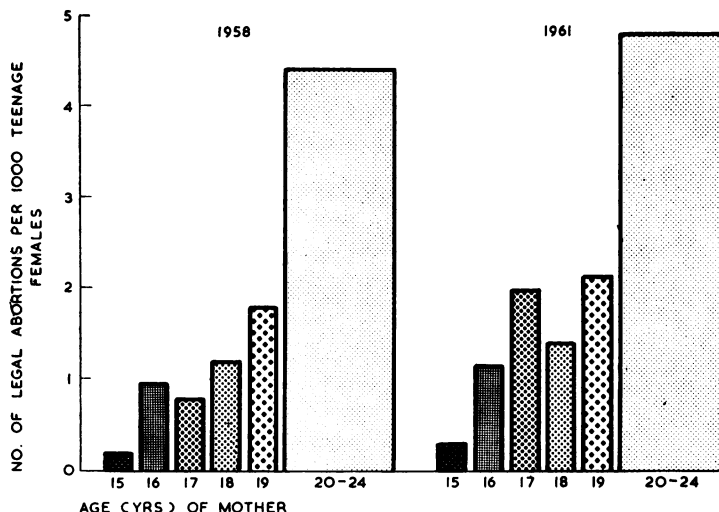


FIG. 9.—Legal abortions of 15–19 and 20–24-year-old women per thousand women of same age 1958 and 1961.

There seems to have been an increase in legal abortions as well as in babies born. Fig. 9 compares the legal abortions in teenagers and in the 20 to 24-year-old group for 1958 and 1962. There seems to have been a little increase in all the age groups studied, most especially in the 17-year-olds. The change is not very great in this short observation period. The number of babies born to marriages of less than eight months' duration has been about the same during the last 10 years. In those under 20 years old it was 43.5 per hundred marriages in 1952 and 40.04 in 1961 (Nieminen, 1963).

It is evident that these statistics are not strictly comparable and would need a more detailed analysis to draw any definite conclusions. In our opinion, however, these different statistics seem to indicate that some sudden and considerable changes are occurring in the physiological development and social attitudes of youth. If the increase in venereal diseases is considered so pronounced that there is need for large scale propaganda and other measures, the problem should, in our opinion, be analysed by a multidisciplinary scientific approach, and the measures be based on the facts found. The changes discovered might be easier to explain if corresponding studies from different countries were also available.

### Summary

Gonorrhoea in teenagers in Finland is a difficult problem, especially in the capital city, Helsinki, where the absolute numbers of notified male and female cases are rising. The age and sex-specific

morbidity has increased slightly in the 15 to 17-year-old females and in the 16-year-old males.

The male:female ratio of the 19-year-olds in Helsinki has diminished from 2.9 in 1953 to 1.5 in 1962, but in the 15 to 17-year-olds the morbidity is about the same in both sexes.

In the smaller towns the trends are the same as in Helsinki but the morbidity is lower. In rural areas the incidence of gonorrhoea is practically insignificant.

Following the age cohorts born in 1939–40 and in 1944–45, a definite rise in the morbidity rate of the female cohort born in 1944–45 is seen in Helsinki. In other towns the male morbidity rates show the same tendency.

Other related data are also presented. The age at the menarche is steadily falling and the proportion of young persons entering on first marriages is increasing, together with birth rates to young mothers and legal abortions in young women.

The authors are indebted for financial aid to the Association for Social Hygiene.

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**La blennorragie et l'âge du mariage chez les jeunes gens.**

RÉSUMÉ

En Finlande, surtout à Helsinki, la gonorrhée présente un problème grave chez les jeunes gens de moins de 20 ans. Le taux de cas notifiés augmente toujours chez les deux sexes, ainsi que la morbidité chez les jeunes filles de 15 à 17 ans et les garçons de 16 ans.

Le rapport hommes/femmes des personnes de 19 ans à Helsinki diminue de 2,9 en 1953 à 1,5 en 1962, mais celui des personnes de 15 à 17 ans est à peu près le même.

Dans les petites villes on fait des constatations semblables, mais les chiffres sont moins élevés; à la campagne la gonorrhée n'existe presque pas.

La morbidité est plus élevée à Helsinki chez les femmes nées en 1944-45 que chez celles nées en 1939-40, et la même différence existe dans les autres villes ainsi que chez les hommes du même âge.

La première menstruation apparaît de plus en plus tôt tandis que le nombre des jeunes gens qui se marient pour la première fois, le taux des naissances dans les jeunes foyers, et les abortions autorisées chez les jeunes femmes ne font qu'augmenter.